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### 1 [Analog synthesis & design methodology: Optimal design of delta-sigma ADCs by design space exploration](#)

Ovidiu Bajdechi, Johan H. Huijsing, Georges Gielen

June 2002

**Proceedings of the 39th conference on Design automation**Full text available: [pdf\(191.40 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

An algorithm for architecture-level exploration of  $\Sigma\Delta$  ADC design space is presented. The algorithm finds an optimal solution by exploring both single-loop and cascaded architectures, with single-bit or multi-bit quantizer, for a range of oversampling ratios. A fast evaluates the performance of all loop-filter topologies and passes the accepted solutions to the architecture-level optimization step which on feasible architectures and evaluates th ...

**Keywords:** ADC, CAD, delta-sigma

### 2 [Interference of bluetooth and IEEE 802.11: simulation modeling and performance evaluation](#)

N. Golmie, R. E. Van Dyck, A. Soltanian

July 2001

**Proceedings of the 4th ACM international workshop on Modeling, analysis and simulation of wireless and mc**Full text available: [pdf\(657.91 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The emergence of several radio technologies such as Bluetooth, and IEEE 802.11 operating in the 2.4 GHz unlicensed ISM frequency band signal interference and result in significant performance degradation when devices are co-located in the same environment. The main to present a simulation environment for modeling interference based on detailed MAC and PHY models. This framework is then used to impact of interference on the performance of Bluetooth ...

<http://portal.acm.org/results.cfm?coll=ACM&dl=ACM&CFID=23532360&CFTOKEN=23630073>

6/29/04

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**Keywords:** IEEE 802.11, WPANs, bluetooth, interference

### 3 [Energy efficiency of TCP in a local wireless environment](#)

Michele Zorzi, Ramesh R. Rao

June 2001

**Mobile Networks and Applications**, Volume 6 Issue 3Full text available: [pdf\(262.70 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The focus of this paper is to analyze the energy consumption performance of various versions of TCP, namely, Tahoe, Reno and NewRr transfer in an environment where channel errors are correlated. We investigate the performance of a single wireless TCP connection by correlated packet loss/error process (e.g., as induced by a multipath fading channel) as a first-order Markov chain. Based on a unified approach, we compute the throughput and energy perfor ...

**Keywords:** energy consumption, energy efficiency, fading, wireless TCP

### 4 [Unconventional interconnects: Optical solutions for system-level interconnect](#)

Ian O'Connor

February 2004

**Proceedings of the 2004 international workshop on System level interconnect prediction**Full text available: [pdf\(873.11 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Throughput, power consumption, signal integrity, pin count and routing complexity are all increasingly important interconnect issues that designer must deal with. Recent advances in integrated optical devices may deliver alternative interconnect solutions enabling drastic performance. This paper begins by outlining some of the more pressing issues in interconnect design, and goes on to describe system-interconnect for inter- and intra-chip applications. Inte ...

**Keywords:** interconnect technology, optical interconnect, optical network on chip

### 5 [Analog design for reuse - case study: very low-voltage sigma-delta modulator](#)

M. Dessouky, A. Kaiser, M. Louërat, A. Greiner

March 2001

**Proceedings of the conference on Design, automation and test in Europe**Full text available: [pdf\(360.20 KB\)](#)Additional Information: [full citation](#), [references](#), [index terms](#)

### 6 [Media Access Control for Ad Hoc Networks: Opportunistic media access for multirate ad hoc networks](#)

B. Sadeghi, V. Kanodia, A. Sabharwal, E. Knightly

September 2002

**Proceedings of the 8th annual international conference on Mobile computing and networking**

Full text available: [pdf\(305.75 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The IEEE 802.11 wireless media access standard supports multiple data rates at the physical layer. Moreover, various auto rate adapt at the medium access layer have been proposed to utilize this multi-rate capability by automatically adapting the transmission rate to channel conditions. In this paper, we introduce the Opportunistic Auto Rate (OAR) protocol to better exploit durations of high-quality c The key mechanism of the OAR protocol is to o ...

**Keywords:** *ad hoc* networks, IEEE 802.11, medium access, scheduling, wireless channels

7 [A case study of a system-level approach to power-aware computing](#)

Thomas L. Martin, Daniel P. Siewiorek, Asim Smailagic, Matthew Bosworth, Matthew Ettus, Jolin Warren  
August 2003 **ACM Transactions on Embedded Computing Systems (TECS)**, Volume 2 Issue 3

Full text available: [pdf\(379.49 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper introduces a systematic approach to power awareness in mobile, handheld computers. It describes experimental evaluation techniques for improving the energy efficiency of a system, ranging from the network level down to the physical level of the battery. A a new routing method based upon the power consumed by the network subsystem is shown to improve power consumption by 15&per and to reduce latency by 75&percnt; over methods that consider ...

**Keywords:** Power-aware, battery properties, dynamic power management, energy-aware, handheld computers, multihop wireless net

8 [A two-layer library-based approach to synthesis of analog systems from VHDL-AMS specifications](#)

Alex Doboli, Nagu Dhanwada, Adrian Nunez-Aldana, Ranga Vemuri  
April 2004 **ACM Transactions on Design Automation of Electronic Systems (TODAES)**, Volume 9 Issue 2

Full text available: [pdf\(658.00 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper presents a synthesis methodology for analog systems described using VHDL-AMS language. Synthesis produces net-lists of components that are selected from a library, and sized so that specified objectives (like AC response, signal to noise ratio, dynamic ra optimized. The gap between abstract specifications and implementations is bridged using a two-layered methodology. The first layer is generation. The second layer is component synthesis and constrain ...

**Keywords:** Analog synthesis, VHDL-AMS, branch-and-bound, genetic algorithms, performance estimation

9 [Face recognition: A literature survey](#)

W. Zhao, R. Chellappa, P. J. Phillips, A. Rosenfeld  
December 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 4

Full text available: [pdf\(4.28 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

<http://portal.acm.org/results.cfm?coll=ACM&dl=ACM&CFID=23532360&CFTOKEN=23630073>

6/29/04

As one of the most successful applications of image analysis and understanding, face recognition has recently received significant atter during the past several years. At least two reasons account for this trend: the first is the wide range of commercial and law enforceme the second is the availability of feasible technologies after 30 years of research. Even though current machine recognition systems hav level of maturity, their success is ...

**Keywords:** Face recognition, person identification

10 [A channel access scheme for large dense packet radio networks](#)

Timothy J. Shepard  
August 1996 **ACM SIGCOMM Computer Communication Review , Conference proceedings on Applications, technologies, ar protocols for computer communications**, Volume 26 Issue 4

Full text available: [pdf\(350.20 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Prior work in the field of packet radio networks has often assumed a simple success-if-exclusive model of successful reception. This sin insufficient to model interference in large dense packet radio networks accurately. In this paper we present a model that more closely communication theory and the underlying physics of radio communication. Using this model we present a decentralized channel access scalable packet radio networks that is free of packet loss du ...

11 [Joint source/channel coding of statistically multiplexed real-time services on packet networks](#)

Mark W. Garrett, Martin Vetterli  
February 1993 **IEEE/ACM Transactions on Networking (TON)**, Volume 1 Issue 1

Full text available: [pdf\(1.10 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

12 [System architectures for computer music](#)

John W. Gordon  
June 1985 **ACM Computing Surveys (CSUR)**, Volume 17 Issue 2

Full text available: [pdf\(4.61 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

Computer music is a relatively new field. While a large proportion of the public is aware of computer music in one form or another, the need for a better understanding of its capabilities and limitations in terms of synthesis, performance, and recording hardware. This arti need by surveying and discussing the architecture of existing computer music systems. System requirements vary according to what t used for. Common uses for co ...

13 [Energy efficient mobile computing: Reliable and energy-efficient digital signal processing](#)

Naresh Shanbhag  
June 2002 **Proceedings of the 39th conference on Design automation**

Full text available: [pdf\(128.64 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper provides an overview of *algorithmic noise-tolerance* (ANT) for designing reliable and energy-efficient digital signal processing Techniques such as prediction-based, error cancellation-based, and reduced precision redundancy based ANT are discussed. Average e range from 67% to 71% over conventional systems. Fluid IP core generators are proposed as a means of encapsulating the benefits of low-power design methodology. CAD issues resident in such ...

**Keywords:** broadband, communications, deep submicron, energy-efficiency, low-power, noise, noise-tolerance, reliability

14 Modeling one- and two-layer variable bit rate video

Kavitha Chandra, Amy R. Reibman

June 1999 **IEEE/ACM Transactions on Networking (TON)**, Volume 7 Issue 3

Full text available: [pdf\(265.12 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** MPEG2, VBR video, multiplexing, traffic model, two-layer

15 Multicast and antennas: A unified MAC layer framework for ad-hoc networks with smart antennas

Karthikeyan Sundaresan, Raghupathy Sivakumar

May 2004

**Proceedings of the 5th ACM international symposium on Mobile ad hoc networking and computing**

Full text available: [pdf\(269.32 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Smart antennas represent a broad variety of antennas that differ in their performance and transceiver complexity. The superior capabilities of smart antennas, however, can be leveraged only through appropriately designed higher layer network protocols, including at the medium access control layer. Although several related works have considered such tailored protocols, they do so in the context of specific antenna technologies. We explore the possibility for a unified approach ...

**Keywords:** MAC layer, ad-hoc networks, smart antennas

16 Characterizing user behavior and network performance in a public wireless LAN

Anand Balachandran, Geoffrey M. Voelker, Paramvir Bahl, P. Venkat Rangan

June 2002

**ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 2002 ACM SIGMETRICS international conference on measurement and modeling of computer systems**, Volume 30 Issue 1

Full text available: [pdf\(606.28 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

This paper presents and analyzes user behavior and network performance in a public-area wireless network using a workload captured at an ACM conference. The goals of our study are: (1) to extend our understanding of wireless user behavior and wireless network performance by characterizing wireless users in terms of a parameterized model for use with analytic and simulation studies involving wireless LAN traffic. Our workload analysis results to issues in wireless ...

<http://portal.acm.org/results.cfm?coll=ACM&dl=ACM&CFID=23532360&CFTOKEN=23630073>

6/29/04

17 From System Specification To Layout: Seamless Top-Down Design Methods for Analog and Mixed-Signal Applications

R. Sommer, I. Rugen-Herzig, E. Hennig, U. Gatti, P. Malcovati, F. Maloberti, K. Einwich, C. Clauss, P. Schwarz, G. Noessing

March 2002

**Proceedings of the conference on Design, automation and test in Europe**

Full text available: [pdf\(462.49 KB\)](#) [Publisher Site](#)

Additional Information: [full citation](#), [abstract](#)

Design automation for analog/mixed-signal (A/MS) circuits and systems is still lagging behind compared to what has been reached in System-on-Chip (SoC) designs. Since analog components in more cases, these analog parts become even more a bottle neck in the design process. The paper is dedicated to latest R&D activities within the MEDEA+ project ANASTASIA+. Main focus will be the development of new design methods for integrated analog and mixed-signal systems ...

18 Fast detection of communication patterns in distributed executions

Thomas Kunz, Michiel F. H. Seuren

November 1997

**Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research**

Full text available: [pdf\(4.21 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to understand the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Amsterdam. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experiments we display repeated occurrences of non-trivial communication ...

19 A design strategy for low-voltage low-power continuous-time sigma-delta A/D converters

F. Gerfers, Y. Manoli

March 2001

**Proceedings of the conference on Design, automation and test in Europe**

Full text available: [pdf\(619.81 KB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

20 Low power implementation of a turbo-decoder on programmable architectures

Frank Gilbert, Alexander Worm, Norbert Wehn

January 2001



**Proceedings of the 2001 conference on Asia South Pacific design automation**

Full text available: [pdf\(109.44 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Low Power is an extremely important issue for future mobile radio systems. Channel decoders are essential building blocks of base-band processing units in mobile terminal architectures. Thus low power implementations of advanced channel decoding techniques are mandatory. In this paper we present a low power implementation of the most sophisticated channel decoding algorithm (Turbo-decoding) on programmable logic devices. Low power optimization is performed on two abstraction levels: ...

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